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ABSTRACT

This booklet is one of the National Humanities Faculty publications designed to examine the question of what is taught, and why. This dialogue between Edwin Delattre and Thomas Donovan explores how humans go about reasoning and solving problems according to their collective, reflective intelligence. (Author/MJ)

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WHY REASON?

A CONVERSATION ABOUT LOGIC WITH EDWIN J. DELATTRE CONDUCTED BY THOMAS J. DONOVAN

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The National Humanities Faculty Why Series

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Why Sing?	Wendell Whalum and David Day
Why Choose?	Harry F. Booth and Ronald W. Miller
Why Reason?	Edwin J. Delattre and Thomas J. Donovan

Foreword to the Series

This conversation bears a simple title: *Why Reason?* Yet taken together, this and the other conversations in this series illuminate one overriding question: What does it mean to be human?

Of course there are no final answers to that question, yet there are hard-won understandings and insights available to us from many sources, past and present. We all too often fail even to ask the question. Thus we ignore the help available and fail to become more human, more compassionate, more decent than we are.

At a time when our problems are so many – racism, poverty, pollution, crime, overpopulation, to name a few – we hold that all who care about education are compelled to reexamine what is taught and why. We believe that the problems will not be solved without getting at the larger question underneath them: What does it mean to be human?

The NHF WHY SERIES, then, reflects the concern of the National Humanities Faculty for the full range of humanistic questions. These questions involve but are not limited to the subjects in the curriculum that traditionally comprise the humanities: English, social studies, music, art, and the like. Indeed, they embrace the purpose of education itself.

In this series, the titles range from *Why Belong?* (human culture) and *Why Remember?* (history) to *Why Pretend?* (drama) and *Why Sing?* (music). Each presents a transcribed conversation between two people – one an authority in the study or practice of a particular branch of the humanities, the other a person experienced in the hard realities of today's schools. In these informal yet searching dialogues, the conversationalists are rooting out fundamental questions and equally fundamental answers not often shared with students of any age. They are the vital but often unspoken assumptions of the delicate tapestry we call civilization.

These conversations are designed for the learner who inhabits us all – not only the student but the teacher, administrator, parent, and concerned layman. We hope they will offer new insights into our inescapable humanity.

A. D. Richardson, III
Director
National Humanities Faculty

THE NATIONAL HUMANITIES FACULTY WHY SERIES

WHY REASON?

a conversation about logic with

Edwin J. Delattre

conducted by

Thomas J. Donovan

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About The National Humanities Faculty

The NHF provides outstanding humanists from the world of the humanities, arts, and sciences as consultants to schools. The program was founded by Phi Beta Kappa, the American Council on Education, and the American Council of Learned Societies under grants from the National Endowment for the Humanities (although the findings, conclusions, etc., do not necessarily represent the view of the Endowment) and various independent foundations. Inquiries are invited: The National Humanities Faculty, 1266 Main Street, Concord, Massachusetts 01742.

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Introduction to the Conversation

Aristotle held correctly that man is the only animal that can reason; human beings only can converse by use of language. Whenever anyone reasons he is carrying on a conversation between himself and another or others. Conversation by use of language emerges in each of us by virtue of our social transactions with others. Without language symbols no one could reason. These symbols (words) have meanings shared by the members of the group who are also participants in social action. Hence all reasoning is social at the core. No one person completely isolated from other human beings could ever develop language nor could he learn to reason.

Inasmuch as arguing or reasoning is social in nature, Delattre emphasizes that there can be no private language nor, consequently, can there be a strictly private argument inasmuch as all argument is carried on by use of symbols, signs or words whose meanings must be shared.

Many people object to being guided by reason because they think of it as cold-hearted and impersonal. Delattre explains that conclusions arrived at by reasoning are by no means unrelated to personal feelings. Rather, such conclusions amount to beliefs shared by each participant in the social process. Shared beliefs are not merely mental. They consist of attitudes of each member of the community; and, more explicitly, a belief, as C. S. Peirce explained, is a readiness to act according to a rule. Reasoning or arguing is justified because it results in beliefs that serve as a basis for peaceful action. If reason is impersonal, it is because it is impartial.

Delattre uses the word "reason" or "reasoning" as synonymous with argue or arguing. This usage makes it clear that reasoning is a dialectic process carried on by two or more persons. To be human is to have a language, and to use a language intelligently is to think or argue in the philosophic and traditional sense of the term. Probably Plato's dialogues are the best example of what both argumentation and reflective intelligence consist of. Even children, when they think, are engaged in this sort of dialectic and argument.

To some the word "argue" suggests wrangling, quarreling, disputing, and "sniping" carried on by those who are irritable, cranky, and generally dissatisfied with life. But "argue" also has a quite honorable meaning. It means reasoning, searching for truth, inquiring after facts that will support beliefs and claims. It means trying to make the meaning of words clear to oneself and to one's associates so that communication will be more effective. It is the latter meaning of "argue" that Delattre and Donovan have in mind in asking: Why reason? This meaning is synonymous with creative intelligence or reflective thinking.

The aim of reasoning or arguing is to arrive at conclusions that are neutral, not in the sense that they have no consideration for personal feelings and emotions, but rather because they are shared by members of the group and take into account the feelings of each person in an unbiased way. As Delattre presents the case, it may well be that reason is a servant to impulses and emotions. At least it is a social instrument, a powerful impartial tool leading to shared beliefs that serve as a guide to cooperative action. Thus in contrast to the view held by some ancient philosophers that reasoning is for its own sake and of value in and by itself, Delattre explains that reasoning, thinking, grows out of social action and conflicting beliefs and in turn is an aid in directing action. To use reason as a guide to conduct does not mean suppressing personal feelings.

As we all know, sometimes we do not think straight or correctly. Sometimes we draw the wrong conclusion from the evidence at hand and often we offer wrong reasons for our conclusions. One purpose of answering the question, Why reason? is to make us aware of correct ways of reasoning and to help us recognize invalid arguments. If we resort to sheer impulse, emotion, or if we "think with our blood" or in a purely subjective way we will not arrive at trustworthy conclusions. In anyone's every-day life a clear understanding of logical argument will make one conscious of the meaning of what he says or writes; that understanding will enable one to say precisely what he intends to say and no more. To be precise is to make statements having shared or social meaning.

There is a moral responsibility included in correct ways of arguing or reasoning. Just as an athlete must train and thus have self-control over what he does with his body, so one has the moral responsibility for self-control involved in correct reasoning. To think correctly requires the application of

socially accepted rules of inference. It means directing the process of inference, and it requires constraint and, generally, self-control. Because thinking is for the sake of action the most crucial place for moral responsibility is in reasoning that precedes action and is a guide to action. Thus we can see that reasoning is also an art of the highest importance.

We often ask: Can men govern themselves? The answer cannot be *yes* unless individuals can govern their thinking or unless, at the cognitive level, each person is master of himself. This means controlling one's behavior by taking thought, not allowing emotions and undirected native impulses to take over. Sheer emotional reactions to social problems consist in responses not controlled or directed by mind.

In making clear that there need be no conflict between personal feelings and socially accepted beliefs, Delattre shows that emotional disturbances over situations and current events naturally call for rational consideration if they are to be dealt with satisfactorily. Reflective intelligence, reasoning, argument applies to every discipline, and no subject matter in our schools or colleges can do without it. Rather whatever is taught must be logically consistent and it is continually subject to re-examination with the hope that it can be improved. The method of re-examination is argumentation.

Traditionally in our American schools and colleges it was assumed that students should learn to reason or to argue from premises to conclusions. This assumption was the basis for justifying courses offered in mathematics, geometry, algebra, and so on. But these subjects dealt only with formal reasoning, with abstractions having no direct bearing on ordinary social problems. They were "irrelevant" to real life problems, since the subject matter was confined to reasoning about the relationship between concepts and the abstract. Delattre emphasizes that logic and argumentation taught in our schools today should be relevant, and this means it should deal with personal and social problems of real concern and importance. First, logic can teach students to clarify the meaning of words and concepts and to apply them correctly in an unbiased way; second, it can teach them to reason about their personal problems (which are as a rule partly social); and finally it can teach them the proper method of carrying on arguments with others so as to solve social problems. The chief assumption at the basis of Delattre's claims is that truth is valuable, truth can be reached through inquiry and argument, truth is what can be agreed on by members of the group, and truth or true statements

should serve as a foundation for our beliefs that result in concerted cooperative action. To ask: Why reason? is to ask: Why solve problems peacefully according to the best-known rules of reflective intelligence?

The two teachers who address this question here do so daily with their students, Edwin Delattre at the University of Toledo and Thomas Donovan in the schools of Vancouver, Washington.

The University of Texas at Austin David L. Miller

WHY REASON?

DONOVAN "Well, that may be a good argument according to your logic, but it's not according to mine." That's not just my students talking; it could be another teacher or a congressman or a used-car dealer. How do we make a beginning on the subject of logic when Everyman feels entitled to his own "logic"?

DELATTRE We're up against it, I admit, because the view you mention or something very much like it is common enough.

Actually, there are two problems at the outset. First, most of the students I talk to think that "argument" means "quarrel" or "disagreement," which is not the meaning of argument in the context of logic and inquiry. The second problem is the statement's disregard for the fact that the canons of evidence-giving or evidence-seeking transcend the notions of mine and yours. There is, after all, such a thing as good reasoning. It's not subjective or idiosyncratic, and it transcends pluralism.

DONOVAN There's also the fact, isn't there, that the reason that transcends individuals is itself suspect? You find among students a notion that they're being manipulated by this great impersonal force *reason.* And besides, they think you can't avoid a subjectivity, a subjectivism, in presenting arguments.

DELATTRE Reason is. 't something independent of us. We are reasoning beings. Reasoning is inquiry, it's the seeking of evidence and the attempt to decide what one ought to conclude. It's not initially the adoption of a conclusion followed by defense of it, but rather the open-minded pursuit of the truth. It's not persuading or manipulating someone else, but seeking alone or together to discover what we should believe.

DONOVAN Reasoning is inquiry, you say. But there you run into another sort of problem: Inquiry, the word itself, sounds generous and free, and students don't notice any constraint until they discover that you can't wander around and be freely creative when you are inquiring, you have to proceed, after all, according to someone's rules.

DELATTRE Yes, when one inquires, there is a point to be stuck to. There is a question, presumably, that's being addressed. There is the problem of what kinds of evidence are relevant to the issue at stake. I don't see that that's an imposition. If one is genuinely concerned to inquire, those rules are not imposed; they are merely part of the nature of the activity of inquiring itself. They're not imposed on us by someone else. We must understand them in order to inquire. To fail to abide by them, to fail to be sensitive to them, is to defeat one's own purpose.

And so in part the challenge, I think, with any group of students is to make clear what that purpose is. When I talk with students about reasoning, one of the first things I talk about is a principle called the principle of rationality. And that principle is, in a nutshell, a normative principle; it's a prescription, an exhortation: we ought always to seek to have as much of the evidence for and against positions or claims as we can command when we reach any decision about what we should believe. Or, if you will, we ought always to assess the evidence relevant to any claim before making any decisions about it.

Now, what can a person say by way of denying that principle? He can say, "I don't believe in evidence," or he can say, "No, I don't think that's the way to do it. I think we can know things by intuition," or "I just know." Or he can appeal to experience or background or what he's been told. But even if he appeals to those things as grounds for belief, he's already in a way entering the realm of discourse about reasons. He's offering reasons why something or other ought to be believed. In that sense he's already implicitly committed to the principle. And so I don't see the imposition.

I think one of the reasons that people, not only students, think it's imposing is that they've been led to a vision of man that's really fragmentary. People – and an awful lot of students I come into contact with – have been persuaded that reason and emotion are inimical to each other, that as soon as one has emotions or feelings, he is somehow being unreasonable. And of course that's just false. One of the hardest things to explain and teach well to students is that the fallacy of appeal to emotion and being moved emotionally

are not the same. What does that mean? A fallacy is a mistake of reasoning; it's not a mistake of fact, but reasoning badly in some way. One type of fallacy is a fallacy in which the conclusion of an argument doesn't follow from the evidence given for it. Sometimes the conclusion doesn't follow because the evidence offered for it is actually irrelevant. This is true in the fallacy of appeal to emotion. An appeal to emotion is a bad argument because claims are made which stir emotions without being relevant to the question at hand; the conclusion doesn't follow from the claims given in support of it.

There's the classical argument, and I gather it's a true story, of the case of the young man, fourteen or fifteen years old, who was being prosecuted for the murder of his parents. His lawyer argued that the jury should be very merciful in this case because the accused was an orphan. Which is irrelevant to the jury's charge, namely to decide whether he has committed the crime. The attorney is just appealing to pity and in a foolish way. So, appeal to emotion as a fallacy in reasoning occurs only when someone uses information which stirs emotions but has nothing to do with the truth or falsity of the conclusion, the answer to the question that is being asked.

Now that doesn't mean that all information which stirs emotion is irrelevant in reasoning. To suppose that it is, is to miss the whole nature of man and of his emotions. I discuss with my students editorials which do decidedly stir our emotions, but which are not fallacious, to counteract such ideas. In one of them, for example, the writer was arguing that there ought to be a congressional investigation of nursing homes for the elderly. He said that there was evidence of widespread use of drugs to keep patients virtually immobile. The drugs make the people very easy to care for, but their use leads to atrophy of the muscles and to mental atrophy; effectively it makes zombies out of these people, and he didn't think that was the way nursing homes should be run. Now his conclusion was that there ought to be an investigation. And the evidence was that people were being given drugs that incapacitated them. Now, nobody can read about an old person being treated that way, nobody who has any sensibilities at all, and not have his emotions stirred. But the argument is not fallacious. The fact that old people become zombielike of course stirs one's emotions. But that same fact is also strikingly relevant to whether there ought to be an investigation. And because it's relevant, there's no fallacy. There's no conflict here between being reasonable and recognizing that one's emotions are indeed stirred.

If we can bring our students to the recognition that having feelings, having very deep feelings, very powerful feelings, does not of itself mean being unreasonable, or being illogical, or being somehow subjective in any pejorative sense, it seems to me we can and do begin to combat the view of reason as tyrannical. A vision of man as fragmented is widespread among the young people I have contact with, and it's basically, fundamentally, wrong. They're convinced, on the basis of experience and background, that as soon as the slightest elements of feeling enter into a person's life or his decision-making, he has somehow foregone the activities of reasonability. And that's just wrong. That's a conception of man and a conception of the living of a life that's terribly barren.

DONOVAN It's rather bloodless, isn't it? That would mean that everything was somehow drained of its natural juices.

DELATTRE It's as though you could take all the features of a life and compartmentalize them, and then go to a certain box and take out the sort of thing you need in a given situation. But that's not the way life is. And it won't do for students to be persuaded that that's the way life is.

You see, the hardest part of teaching reasoning, the hardest single part, is to make it clear that logic is just like any other kind of big tool. A bulldozer or a crane or a huge piece of machinery of any sort can do terrible damage if it's in the hands of people who don't know how to use it. If you let your students think that reason is somehow entirely separable from everything else that's human, or think that reason is essentially competitive, or think that arguments are the sorts of things you win and lose, what you end up doing is giving those students a bludgeon, a club with which they can do hardly anything but abuse other people and themselves. One task in the teaching of reasoning is to explain that the value of reasoning lies not in its ability to coerce but in its ability to help us find the truth. And when we work with students, we need to show them that this task of inquiring, a life of inquiry, is not a life in which one says, "I shall never more have feelings."

DONOVAN Maybe the word "transcendence" shouldn't be used with young people, because they take it to imply complete impersonality, detachment, desiccation. It means to them that reason is useless in the parts of their lives involving problems of affection and trust and that sort of thing.

DELATTRE Perhaps we should begin by using the word "reasoning" more often than "reason." You know, when we talk with students about reasoning

as a human activity it should be very different from talking about Reason as though it were some disembodied entity.

DONOVAN Like Fate and Evolution and the other abstractions that have been personified through the years.

DELATTRE Yes. Reason is disinterested and impartial, it's required for objectivity. But it isn't neutral and a person who is reasonable isn't uncaring or mechanical.

DONOVAN Yes, that is very important. It's the neutrality of reason, or the expected neutrality of reason, that young people seem to find wicked.

DELATTRE Well, in what sense do they understand it as neutral?

DONOVAN That it's hostile to your ambitions and desires. As though the Universe has set its course, and it doesn't make any difference how you feel. A logical argument is always neutral against you, so to speak.

DELATTRE Suppose you take two arguments. Suppose you take an argument like "All men are mortal. Socrates is a man. Therefore Socrates is mortal." And then suppose you take an argument like "All Presidents are rich men. Gerald Ford is a rich man Therefore Gerald Ford is a President." Now one of those arguments is better than the other. Indeed the second argument is simply invalid. That is to say, the conclusion obviously doesn't follow from the premises. (In the special language of logic, it commits a fallacy called "undistributed middle term.") Now reason says one of those arguments is valid – or, if you will, one of those forms of inference is a reliable way to think, a reliable way to argue. By which I mean that if you reason in this way and you start with true information, you will end up with true information, you will reach true conclusions. In the case of the second argument, that way of reasoning is unreliable because you can start with true information and, if you reason like that, end up with false information or at least with false beliefs. If you end up being right, it's only because you're lucky.

Now, in what sense is reason neutral? Reason says if you think in the first way, if you reason in the first way, you'll be served well by the way you reason. If you reason in the second way, or if you think in this way, you're very likely to be misled. Sooner or later you'll be ill treated by your own way of thinking, and you'll reach conclusions that will serve you ill. You'll very likely come to believe things that are false if you think this way. Now, objectivity consists in part in the appreciation of the differences between good argumentation and bad, between reliable forms of inference and unreliable

forms of inference. But reason is certainly not neutral in the sense of saying whatever way you think is just as good as any other way, or however you seek and use evidence is equal to all other ways. Reason, after all, makes claims about what good arguments are like.

DONOVAN What does that mean in practice?

DELATTRE It means, in practice, that because a conclusion is based on the best available evidence, because the preponderance of argument favors it, it's reasonable to support it, to accept it, at least provisionally, as the truth. And so reason is hardly neutral in the sense of saying, "Well, even after all the activities of reasoning have been gone through, now the proper conclusion is that everything is equal, or that all conclusions are equally good." That's not being reasonable. And that's why being objective, reaching a position on an issue on the basis of available evidence, is not a case of being neutral. I take the view that the Socrates example is a reliable argument and the Ford one isn't. So I'm hardly neutral, in the sense that students use the word, about those forms of reasoning. I *care* whether the reasoning is any good, whether I can trust it. So, whenever students suggest anything along the lines of reason is neutral, reason is barren, the passions are alien to reason, I do my level best to show that reasoning is thoroughly human, and that it has tremendous value for us.

DONOVAN Actually, of course, these same students use reasoning far more than they admit to themselves or to us.

DELATTRE Certainly. It's like the business of writing prose: here I've been writing prose all this time and I didn't know it. The fact of the matter is that students, even students I've met in middle schools and so on, have a very rich tradition of reasoning, of seeking and giving evidence, that they're not able to identify explicitly, to classify as such. But sure, they reason.

What you do is work with students on the ways to tell good reasoning from bad (to distinguish reliable forms of inference from forms which are unreliable). And, in my experience, a great many students are eager to know. They're eager to understand. How many times do you meet a student who, when presented with a particular argument, will say things like "There's something wrong with that argument. I don't know what it is, but there's something wrong with it." He's eager to know what exactly is wrong with it. If you explain what's wrong with it and how to look at arguments and tell what's right or wrong with them, students are very widely and thoroughly responsive.

To begin with, you can take all sorts of very simple examples. My sense of teaching is that one doesn't start with the cosmic, whether teaching logic or whatever. One starts with very daily sorts of questions. Suppose you take a TV commercial, a real one. For example, suppose there's a gasoline ad where a certain amount of brand A gasoline enables a car to run a given distance. And then the same car, with the same amount of brand A gasoline, only this time with an additive, is run on the same course, and inevitably the car goes through a paper barrier where before it ran out of gas, and it goes some distance farther. Now, the conclusion that one is supposed to draw from this is that brand A with its additive is a better gasoline than one would otherwise buy and hence that one ought to buy A-with-additive. This demonstration doesn't show that. It does prove something. It proves that A-with-additive is better than A-without. But nobody sells A-without-additive. X doesn't sell it. Y doesn't sell it. Z doesn't sell it. They all sell some other kind of gasoline. And so what this test shows, what this competition shows, is that A-with-additive is better than some product of company A's own that they don't offer on the market, indeed that nobody offers in competition with A. No genuine reason is offered for buying A, no relevant reason.

Now, you can do arguments like this, demonstrations like this, with students with tremendous effectiveness. And part of the reason that it's worthwhile in this particular case is that most of the students we teach now have been raised in an era in which science is pervasive, ubiquitous; one hears all the time about demonstrations being scientific when there's nothing scientific about them at all. Students frequently don't know the difference between science and scientism, or between something being scientific and its having the appearance of being scientific. If we can introduce a care and understanding of reasoning that shows what sorts of conclusions can reliably be drawn from given kinds of evidence, scientific or otherwise, students are very responsive to the fact that they are better able to deal with the world they find themselves in than they otherwise would be, or otherwise are. I'm not persuaded of the awesome difficulties of talking with students about reasoning.

DONOVAN Well, how do you go about it?

DELATTRE To get into the sorts of things that I think we should try to teach our students about reasoning and how to reason, I want to talk a little bit about inquiry and the methods of inquiry. In the first place, reasoning at its best, bona fide inquiry, isn't reducible to offering a defense of what one

already believes. Reasoning is a project. It's the project of finding out what one ought to believe, and that means taking seriously the evidence that one has the time to garner and knowing how to use it.

Now, one of the mistakes that many students make is the mistake of supposing that every story has two sides. Presumably this is a great gain over the view that stories have just one side. But, in fact, stories don't have two sides (except in the limited sense of formal contradictions being exhaustive). Most stories have a great many sides, and the problem is to decide which of these sides, or which of these competing claims, one ought to believe. And the task of inquiring effectively cannot be fulfilled unless one knows how to tell reliable ways of reasoning from unreliable ones. When one is genuinely trying to find out what he ought to believe, even if he already believes something but still has the humility to suppose that he might learn better or that his position might be improved, then he has the spirit of inquiry and the capacity to benefit from knowing how to reason well.

It seems to me, in any course addressed to these kinds of questions, the first fundamental point to be made is that reasoning is after all linguistic. It's fundamentally bound to the use of symbols, to the use of language. And this means that the techniques of language usage, effective language usage, for the purposes of inquiry have got to be made clear. Language has a lot of uses. We use it to direct, we use it to give commands, we use it to exhort, we use it to explain, we use it to greet, we use it to make promises; we use language for all kinds of things, of which inquiring is one.

In working with students, questions about meaning are basic. And that means you have to address the methods of definition that are available to us. Now why is that pressing? It's pressing in part because so many students have been persuaded of the adequacy of the Humpty Dumpty Theory of Language. You recall that story from Lewis Carroll where Alice and Humpty are talking. Indeed, they're having a disagreement about birthday presents and unbirthday presents. Then at one point Humpty says, "There's glory for you!" And Alice says, "I don't know what you mean by 'glory.' " And he says, smiling and contemptuously, "I mean 'there's a nice knock-down argument for you.' " When Alice objects, Humpty replies that when *he* uses a word, it means just what he chooses it to mean; "The question is which is to be master – that's all." The point about Humpty is that if he's using "glory" that way, he might be using all his words that way, and hence we couldn't understand anything he meant.

Furthermore, and this is a bit more subtle, Humpty himself couldn't understand what he meant! You have to have a public language in order to have any language at all. The concepts in that language have got to be shared. Language is after all socially arbitrary, not privately so. By "arbitrary" I mean simply that language users decide what their symbols shall signify, decide what their words shall mean, but that's a social project, not an individual one. We don't deal privately in language. And so the first point to make with students is that, although words have subjective connotations, although words stir in us, individually, different feelings or different images, that fact doesn't preclude their having objective meanings, public meanings; it doesn't mean that they have no meaning which transcends those subjective connotations. And I use transcend deliberately.

This is important. Not just for the sake of reasoning, but for the sake of the very quality of life of our students. If it were true that the meaning of words were private and arbitrary, then the use of language would become mere ritual. Language wouldn't function any longer as communication. It wouldn't have any explanatory power. It wouldn't have any power in terms of justification. The possibility of argument would be gone, along with description; just think what life would be if all our meanings were private and arbitrary.

So we need to talk with students about how to understand words correctly. And I don't care whether one talks about words like table and chair, or one talks about words like justice or freedom or liberty or happiness or morality. These words do all have meaning. While our definitions of them may not be adequate and may remain provisional, nonetheless we're charged to help our students see how to use language effectively and hence how to be able to define.

One reason that's so pressing is that so many student conversations that end in disagreement do so because the conversations are verbally skewed. That is to say, many are mere verbal disputes; two people seem to disagree about some substantive claim, when they don't really disagree. In fact, what has happened is that they are using a key word in different ways. One student says, "Hubert Humphrey is a bigot," and another student says, "No he isn't. He's not a bigot." And then we discover in talking with the students that the one student means by a bigot anybody who ever voted against any piece of civil rights legislation whatsoever, and the other student means by a bigot

someone who is actively prejudiced against some class of people or other. Now, you can show the inadequacies of the first understanding, or the first definition as it were, of "bigot" in that conversation and show that there's no warrant for using "bigot" that way in public discourse. After all, a piece of civil rights legislation could be misguided. But the point is that the students haven't seen that they're using the word differently. And so we should try to explain how to define and how to appreciate the different meanings words have, different publicly, not privately and not arbitrarily. It doesn't take long to explain definitions by synonym or by etymology, but it's important to explain them. It's easy to explain revelatory definition too, that is, definitions which reveal things we usually overlook about a particular concept. Like "architecture is frozen music," or "man is the being who asks who he is."

Beyond this, we need to discuss the distinction between meaning and reference, and the related distinction between intensional definition and teaching by example how a word is used.

DONOVAN Isn't that distinction pretty alarming for some people? As though they suddenly see an awful depth opening before their feet?

DELATTRE Well, it's certainly a distinction that many students I come into contact with don't make, but it's not an impossible one. There's a clear difference between the things to which a word refers and the meaning it has, the meaning that makes it appropriate for the word to refer to those things.

Take a simple word like "table"; it has an extension, it refers to things. It refers to all the tables there are, and we can explain how to use the word by appealing to examples. If a Frenchman asks us what "table" means we can point to tables – the dining table, the coffee table, and so on. But that's not to define the word, it's not to give an intensional definition, to analyze the concept.

When you give an intensional definition, what you really give is a list of the properties that anything whatsoever has to have in order correctly to be referred to by this word. It's really a kind of statement of criteria. To define the word "table" intensionally is to say something like "A table is a physical object." But that won't do, because while it's true that all tables are physical objects, it's not true that all physical objects are tables. And so a more rigorous list of specifications has to be given. A table is a physical object that has a flat surface and is suitable for people to sit at, ordinarily. Its uses could be included. A table is a physical object with a flat surface that is appropriate

for sitting at, for reading or writing or eating, and so on. The example is banal, but the distinction is not.

The distinction becomes so pressing because intensional definition has validity for words that are not like table, that is, words that don't refer to ordinary physical objects, words like justice or freedom or liberty. The problem is that when you try to define such words extensionally, you say, "Here's a case of justice. This person's treatment of this other person was just." And someone else says, "No it isn't. That's not an example of justice." You can't really know what an example of something is – in this case, what an example of justice is – unless you're able to say something explicit about what the word "justice" means. There's a kind of logical priority here, a technique of definition by intension, that precedes explanation by example. Or, if you will, examples always in some ways beg the question of what a word means: you have to be able to say what the word means in order to decide whether a given form of treatment is an example of justice, in order to apply the word coherently.

Now, when I talk with my students about a word like "justice," usually, and again like Humpty Dumpty, they'll say something like "Well, you mean what you mean by justice, and I mean what I mean by justice, and that's really the end of it. Everybody has his own meaning for justice." But actually, when we begin to work on what the word means, we find that there's a very widely shared conception of what justice means, often inadequate to the concept of justice, but none the less widespread and really rather helpful. Almost always the discussion of its meaning will start out with somebody saying something like "Justice means fairness. Being just means being fair. It means treating people equally." Then I ask, "Is this definition adequate? Would we agree that all cases of justice are cases of treating people equally, and that all cases of treating people equally are cases of justice?"

I ask the question that way because one test for an adequate definition is the "all and only" test. Any definition to be adequate must be equivalent in meaning to the concept it's to define. If they're equivalent in meaning, then one can be substituted for the other in any sentence whatsoever, without altering the truth value of the sentence. The way to test that is not to go through the infinite list of sentences that you could compose, but to use two sentences that go like this: "All *s* are *p*. All *p* are *s*." In this instance, *s* equals *cases of justice*, and *p* means *cases of treating people equally*. If both those

sentences are true, it means that in every case *s* and *p* can be substituted for each other without any alteration in truth value, and hence that they mean the same. The reason it's called the "all and only" test is that the sentence "Only *s* are *p*" and the sentence "All *p* are *s*" mean the same. And so "All and only *s* are *p*" means "All *s* are *p*, and all *p* are *s*." If that whole sentence is true, it means you've got an equivalent definition, an adequate definition. Now not all words can be defined with this exactness, but that's not a problem. Some words refer to things that vary greatly but resemble each other. That doesn't mean that there's something wrong with the word or that it can't be defined. It only means we must remember that it refers to diverse things which resemble each other when we construct our definition. (You might consider a word like "game," for example.)

What I do when students answer something like, "Yes, that's what justice means; as long as you treat people fairly, and that means equally, and that means the same, then you're being just" is go over to a student in the front of the room and say, "Now I want you to pretend that I have just kicked him in the shins, very hard. Have I been just?" And my students always answer, "No, you haven't been just; you shouldn't do that to him." And I say, "Well, now let me understand you correctly. You mean that I treated him differently from the way I treated the rest of you. I haven't treated you equally. So now I propose to walk through the room and kick everybody in the shins. And then I will be able to say 'You see I have treated you all the same.' Then by your definition I'm a just man. I'll have behaved justly with respect to you." Of course, they always say, "No. No, you haven't behaved justly. You haven't treated us well at all. This is not justice. It would be perverse to call this a case of justice."

And so it emerges in the course of the conversation that justice means treating people equally, and it also means treating them with regard for their interests. And it means treating them well. And it means not doing things to them that they don't deserve to have done to them. The conception of justice that is made explicit, or is laid out in the conversation, comes to be progressively richer, and, in my experience, the students are usually very surprised to find that they mean pretty much the same thing by justice. They don't disagree about what the word "justice" means. What has been conveyed is the sense of the publicity of language, the sharedness of meaning. Then you can say, "All right, now we have this account of justice; it's provisional at best,

there's more to be said about it, but let's take a look at this example you were talking about." Usually students are able to say things that are right or at least more intelligible, and they're able, if they disagree, at least to disagree on substantive grounds that merit being talked about. The conversation isn't reduced in the end to some simple-minded cop-out like "Well, you mean what you mean and I mean what I mean, and that's the end of it."

Next, it's important to introduce the notion of relevant factual differences. And when one does – let's stay with "justice" – then the idea of justice becomes a good bit more complex. For example, I treat my own children differently from the way I treat anyone else's, because they are my own. The fact that they're my own is a relevant difference about them, and hence warrants a difference in treatment. With those kinds of refinements, the conception of justice comes to have real utility in discourse. It comes to have real effectiveness in talking about human situations, human problems, and ways of responding rightly to human problems.

So the conception of meaning as distinct from reference and the conception of definition and the conception of relevant differences can emerge in the course of a single conversation, and when they do, the quality of discourse among students and with them seems radically to improve. They find that their capacity for language gives them power in discourse, power to learn, power to understand, power, really, to appreciate the views and claims and beliefs of another person, something they had believed to be impossible. And I think that's the cornerstone of learning anything of significance about inquiry, how to inquire – learning what the real values of inquiry are in practice.

Not just with students, but with lots of people, what happens is that inquiry frequently deteriorates into a bull session. Bull sessions are characterized in large measure by absence of a shared conception of the words that are being used, real vagueness about the language that's at stake, and also by the unfortunate feature of having one person talking and the other busily thinking about what he's going to say next and not listening.

DONOVAN In those circumstances, if you try to be exact in what you say, they tell you that you're "beating around the semantic bush." If you want clear meanings from others, they simply restate their position, and call their paraphrase a definition.

DELATTRE It's not as though a definition of a concept like justice were ever fully adequate, there's always more to be said, but that's not the point.

The point is that we can come to some explicit degree of clarity about the meaning of a word, and how we shall use it together. Students find themselves able to do things in conversation they weren't able to do before. And they find themselves freed of dependence on that terribly inadequate way of finding out what a word means, "Webster says," or "the dictionary says." You may learn things of value from a dictionary, but not everything and not enough. The point I try to make with students is that effective language usage in inquiry takes expertise. It takes learning how to do it. And the proof is in the pudding. If you learn how to define concepts intensionally, you're able to do things with language that you can't otherwise do. Not only with other people, but by yourself as well.

DONOVAN This talking about language seems automatically to make inquiry and reasoning a pertinent part of any English course, where we aim at studying language in various ways. You yourself teach in a philosophy department. You used as your example "justice," which clearly falls in the social sciences In other words, we're saying something here that goes right straight across the board, through the curriculum. Probably in the hard sciences, more of this is done, in a way, because the student's being introduced to completely new concepts. "Justice" he's heard bandied about for many years. It's assumed that you'll discuss definition and fully come to grips with it when you're working on "chromosome." But in these other courses we don't do it. We let it slide by. The teacher says, "Well look it up in the dictionary," which is, as you've just said, inadequate in many cases.

DELATTRE Yes, this cuts right across the board. When you ask a student to build an intensional definition of a concept, you place a limit on him by saying, "I want you to define this word, and I want you to do it without using any examples at all. No examples unless they are used to show that the word refers to diverse things which resemble each other." But where do we do this most often? In mathematics courses, I think. Define triangle. Define rectangle. Define plane figure. And so on. That's where students say, "Oh, I remember doing this." When you take a word like "triangle," they can define it explicitly and exactly.

DONOVAN And easily.

DELATTRE Right. It's a plane figure and it has these properties. Namely, it's a closed plane figure having three straight sides. And at that point you've done it. You can appeal to those kinds of heritage that the students have.

But it has to go far beyond just mathematical concepts. I think it has to happen in virtually all courses. When you talk about history as explanation, you've got to be able to say what historical explanation is, or what you think the most useful and productive kinds of explanation are in history. You've got to be able to define the words you use in any English class, whether you're talking about plot or novel or saga or epic or whatever. The utility in science and mathematics is obvious.

But the point is that most of the reasoning students will do in their lifetime is nontechnical. That is, it's reasoning that's not mathematical in nature, reasoning that's not strictly speaking scientific. It'll be reasoning about decisions they have to make about what to do. And, in that sense, words like "justice," words like "self-interest," become especially pressing words. For that reason this subject ought to be addressed explicitly again and again and again across the board in the courses students take.

I don't think you can do a successful minicourse in logic. I think it's a mistake in curriculum to try to build a three-week shot in logic, because you have to oversimplify terribly and all the edges have to be cut off everything to make it fit into the time. Logic – reasoning – has to be pervasive in the courses students take. You have to be able, all the time, to appeal to examples of certain kinds of reasoning. You have to be able to use the techniques of definition. And it's not really that hard to learn.

DONOVAN You don't think that "critical thinking" is an appropriate course in a school?

DELATTRE I firmly believe it's an appropriate course, but I don't think it can be taught as a minicourse. If you try to teach a course in critical thinking, it seems to me that it has to be a bona fide full-term course. And it has to embrace these techniques of language usage that I've talked about, techniques of definition, and then it has to move to various tests for the reliability of forms of argument.

DONOVAN Do you think that English departments or English teachers bear a special responsibility in this?

DELATTRE No, no. I want to answer that very explicitly. I don't think anybody bears a special responsibility for critical thinking. That is, all of us are responsible. If there's any course that's being taught without any appreciation for critical thinking, it's not being taught right. Obviously many courses never treat it explicitly, but it needs to be there as backdrop.

DONOVAN Perhaps we ought to say what we mean by "critical thinking," giving the breadth of your adjuration.

DELATTRE Well, in this context, I mean knowing how to reason. And that means being able to tell reliable ways of arguing from ways that are unreliable. And that, by the way, takes in all the background in language that I've just barely touched on here.

DONOVAN With the sciences and mathematics, where you do have a special vocabulary, a novel vocabulary, we can be sure that part of the job is going to be done. But what about the ordinary, everyday language that we use for ordinary human purposes? Who's going to straighten that out?

DELATTRE Well, give an example, an ordinary language problem.

DONOVAN Justice, the one you were using before.

DELATTRE Certainly in social studies, questions of justice ought to be raised. And, if you're teaching a course in literature, it seems to me it would be unusual if no questions of justice would arise. Or a business course in relation to a fair day's work or justice for consumers and retailers, or any professional course where one learns about a product or service or skill which will be provided people. The responsibilities of justice run throughout our activities and practices, vocational and personal, as in physical education – justice in competition, fair play.

DONOVAN But isn't it too easy just to say that all teachers are responsible for the way young people are taught to use language, that all teachers are responsible for inculcating these skills of definition and so on? How can you be sure it's going to be taken care of if it's only everybody's responsibility? Besides, it's commonly thought that logic is a special subject matter, even an esoteric subject matter, and teachers really cannot be persuaded to accept an unlimited accountability. English teachers will do only certain sorts of things, and social studies teachers will do only certain sorts of things, because they have prudently narrowed the area of their expertise. Well, imprudently, perhaps. But we do have this kind of fragmentation in our schools.

DELATTRE Well, I don't think that the learning experience of students should be fragmented. You may have, and certainly do have, areas of specialization, but that doesn't mean that certain elements – like methods of reasoning – aren't crosscurricular, as it were. For example, all teachers must pay some attention to how well their students read . . .

DONOVAN You'd be surprised.

DELATTRE . . . although reading objectives are regarded as the particular domain of the English teacher. Aren't you distressed when the social studies teacher doesn't insist that the students read the history books just as carefully as you insist that they read a novel? Or an industrial arts teacher with an instruction manual, or a teacher of hygiene and first aid?

DONOVAN Yes, yes.

DELATTRE It seems to me that logic falls in that order of magnitude, rather than in the differentiations of subject matter. So does writing. In fact, reading and writing and reasoning are necessary to each other. I don't think you can teach a student to reason well by the spoken word alone. There has to be the experience of reading, and there also has to be the experience of writing. I think that writing is far too little addressed in curriculum.

DONOVAN Well, the teaching of writing – composition – is regarded by many teachers as a great burden. Some believe that writing cannot be taught, or since the correction of student writing is exasperating for the teacher and defeating for the student, that creativity is all, and students have a right to their own language. I am sure that inability to read at the high school level is a reflex of this attitude toward writing. Books are read as effusions. As a result, students are quite unable to reason, unable to analyze, unable to define. They simply do not know any intelligible functions words are intended to fulfill.

DELATTRE Yes, it seems to me that many students have a very great prejudice about language. And it's not one they got by accident. It's one that's been brought to them – the old Humpty Dumpty Theory. You can't use language idiosyncratically, and you can't just use language by accident. You have to learn to use it. If teachers don't explicitly work against this prejudice against language, the prejudice against the possibility really of defining words or of understanding them, it becomes virtually pointless to read. If language is, after all, private, if the meanings of words are purely personal, then what is the point of reading anything? The author thinks what he thinks, says what he says, but we really don't know what he means, or there's no way to tell what he means. There's no way for him to explain to us what he means. Likewise, why should anyone be an author, why bother to write, if what he writes is automatically unintelligible?

DONOVAN Could we get at this need to understand and appreciate reasoning by talking about things teachers can do, if they're willing, to make them-

selves more aware of this? You've already talked about definition. Now what are some other logical tools that teachers can use without undertaking a class in formal logic, which would not seem to serve our need? What are some other devices, besides definition, to make teachers as well as students see all this as something basic for the educated person?

DELATTRE Well, there's a good bit to be said about that, but it has to be said with the understanding that the business about language has to inform the whole activity. Next, I think the most effective thing to talk with students about is what an argument is, logically speaking, and how to distinguish good arguments from bad ones.

An argument is a unit of discourse in which some sentences or statements are offered as reasons for another statement; that is, an argument is constructed by giving evidence for the truth or probability of some statement or statements. Now good arguments are those which do what they purport to do, they genuinely establish the conclusion as true or probable. Whether an argument thus succeeds depends on both its form and its content, and logic studies the forms of argument which are reliable or the ways of reasoning which are logical. So we need to talk with our students about the sorts of form good arguments must have.

Those can be laid out clearly and rather straightforwardly, and without great difficulty, I think. Perhaps the clearest way of teaching here is to specify the features any good argument must have and to classify arguments lacking one or more of these features as fallacious. We can then be rigorous in our knowledge of types of fallacies and be alert in detecting them in our own and others' arguments. A fallacy is a logical mistake in reasoning, a mistake which is not always or even often obvious. And whenever an argument is fallacious it means that the form of argument is unreliable. This doesn't mean that the conclusion is false, but rather that the argument provides no reason to accept it as true.

There are three basic features beyond clarity of language that any argument has to have to be reliable. First of all, the premises (that is, the evidence that's offered) have to be internally consistent. Second, you have to be able to know that the evidence is true without already knowing that the conclusion, the statement for which the evidence is offered, is true. And last the conclusion must follow from the evidence given. Let's see what this means in practical terms.

If you have an argument that has premises that are inconsistent with each other, the argument can't go anywhere. In any argument, in any battery of evidence for a claim or against it, it has to be possible for all the evidence that's offered to be true at the same time. That's fairly easy to deal with. There's an example that I've had come up in a number of classroom contexts – an argument about fair housing practices: Everybody has a right to live wherever he wants, provided the property he wants to buy or live in is for sale or rent and he can afford to pay for it. But no member of some group or other (no black, no oriental, no Indian) has a right to live in my neighborhood. That would interfere with my right to choose my neighbors.

The first premise is that everybody has a right to live where he wants, if he meets the economic conditions. The second premise is the last sentence, namely that everybody (or at least the speaker) has a right to choose who his neighbors will be. Now those premises can't simultaneously be true. If the first is true, the second is false. And if the second is true, the first is false. The argument is utterly skewed. You can't reach any conclusion from an argument like that because you can't use the information simultaneously. You've got to make a decision about which piece of information is reliable, which ought to be believed.

And so one works with students about consistency of premises. It's easy to do; students pick it up; they're sensitive to inconsistency. They don't always see it in practice in their own thinking, but none of us does. And so the task is to work with this sort of explicit example, and then any able student will say, "Well okay, I see that these both can't be true, but which one is? How do you decide which one is?" It's easy enough to explain that if it weren't for the first, there would be very little warrant for asserting the second. The conception of rights that's embodied in the second – the right to pick one's neighbor – presupposes prior rights, about the status of people with respect to where they have a right to live. Of course, we do have a right to pick our neighbors when *we* move *into* a neighborhood. But that's very different from having a right to prevent others from moving in.

DONOVAN If you reduce it sufficiently, you're saying, "I want the A's to live in the house east of me and I want the B's to live in the house west of me." But maybe neither of them want you living west or east of them. Can't you leave out any other complicating factors?

DELATTRE That's an even better way to explain it. It shows how the second premise is by itself inconsistent in practice and therefore why it should be rejected.

Now, just as for any form of inference to be reliable its premises must be internally and mutually consistent, it's also true that for a form of inference to be reliable, you have to be able to know that the evidence is true without already knowing that the conclusion is true. The most common way of criticizing arguments which fail on this score is to say, "Well, you're reasoning in a circle." That's one way of committing a fallacy of "petitio principii," a fallacy of begging the question. What does that mean in practice? It means that a form of inference is unreliable if you offer a conclusion as evidence for itself, going around in the circle. "Petitio principii" means, roughly, "the conclusion at the beginning (and again at the end)."

A classic example – and one you may or may not want to use with your students – is one that Descartes uses in the *Meditations*, criticizing a popular argument for the existence of God. If I use it, I'm always careful to say explicitly that this example doesn't prove anything at all about whether the existence of God can be proved. It runs something like this: The conclusion is "God exists." The question is: "How do you know God exists?" And the claim, the evidence, the first premise is: "Because the scriptures say so." And then of course the question arises, "But how do you know that what the scriptures say is true?" Second premise: "I know that what the scriptures say is true because they are the word of God." "How is it possible for them to be the word of God? If and only if God exists." There's a case in which you couldn't possibly know that the premises were true unless you already knew that the conclusion was true. And yet, the burden of the premises is to establish independent grounds for the truth of the conclusion.

There's another aspect of petitio principii fallacies that's worth mentioning here: the fallacy of the complex question. The complex question is a question which has a hidden assumption whose truth is taken for granted so that any answer to the question is bound to be misleading. A fallacy is committed when the assumption or the misleading answer is used to reach some conclusion.

DONOVAN I suppose the obvious example of that, the one everybody knows, is the wife-beating example: "Answer yes or no, have you stopped beating your wife?" Whether you bring yourself to say yes or no, you are confessing your monstrosity.

DELATTRE Yes, that's the classic. Now the only reason that the conclusion of wife-beating is reached from the question is that the assumption is built into it. While all questions have trivial assumptions, some questions have very important ones. One of the things that students need to learn is what the assumptions of their questions are, and what the assumptions of the questions of others are.

All too frequently one sees a class started by a question like that. Recently I saw a teacher start a class by asking, "Why has the quality of politicians declined so terribly in modern times?" The students were burdened to work very hard on this problem. But it wasn't at all clear to me that the assumption of the question – that the quality had in fact declined – was true, or that the question should be addressed in the way it was, without explicitly examining that assumption. Now, you do have to be careful that students don't get the idea that, because every question has assumptions, they're all complex. You have to make the point that some assumptions are trivial and obviously true and so unproblematic. But we all need at least to be sensitive to what the assumptions of our questions are.

The third basic type of fallacies is the "non sequitur fallacies," and "non sequitur" means "does not follow." They include the pure deductive fallacies and all the inductive fallacies. Perhaps most important pedagogically, the class of non sequitur fallacies includes fallacies of irrelevance and fallacies of insufficient evidence. In an argument it's not enough that the evidence that's offered is true, it also has to be relevant to the conclusion that is reached. Frequently what one discovers in an argument is that while the claims may very well be true, they're irrelevant to the conclusion at stake. So while one accepts the truth of the premises, one doesn't yet have any reason for accepting the truth of the conclusion. And the forms of fallacies of irrelevance are virtually without limit. They just proliferate boundlessly. You have such things as ad hominem fallacies, appeals to ignorance, appeals to consensus, appeals to force, appeals to emotion, the fallacy of diversion of the issue – that's enough to give you some idea of the abundance, and most of them are self-explanatory. Fallacies like insufficient options, or black-and-white thinking, and special pleading occur when the evidence that's given isn't full enough to yield the conclusion of the argument. They are insufficiency fallacies.

DONOVAN I'm sure we don't have time to go into all of them here, so

where would you suggest one turn for examples of these self-explanatory fallacies?

DELATTRE Obviously we can't do a minicourse in logic today, and I've already expressed my objections to trying to do one even in three weeks. But I'd like to say very strongly that I don't think anyone should attempt to undertake work in critical thinking with students without having read an introductory text in logic – not take a course, but do read a text. Several introductory logic texts are straightforward and readable and short. It doesn't take any great investment in time (or money) to command one. Their main shortcoming is failure to discuss what we're talking about today.

DONOVAN You will include some titles in the Bibliographical Note, then?

DELATTRE Yes, indeed. But let's take time to look at a few of the fallacies of irrelevance and insufficient evidence because they're so common and because it's so important that students – and everybody else – be able to spot them.

Keep in mind that whenever we are working with a student on whether a fallacy is present or has been committed in an argument, the most pressing thing to ask is: "How can you identify a particular kind of fallacy? What are its characteristics?" Take an ad hominem fallacy, for example. An ad hominem fallacy is an argument "to the man," and the point is that many times the claims about men, about their characters or their circumstances, are irrelevant to the truth or the falsity of what they say. So, for instance, we could find someone saying, "Well, what X says is false." Why is it false? "Because he's stupid." That's irrelevant, strictly irrelevant. All of which is to say that people who are stupid can nonetheless say true things. The evidence for the truth or falsity of the claim has, in most cases, to be independent of and separate from the person who makes the claim.

Now, ad hominem fallacies fall in three general classes, and we can talk about two of them here. An abusive ad hominem fallacy is a fallacy of the "he's stupid" sort. Or what X says is false because she's a woman, and everybody knows all women are unreliable. Now those kinds of claims are simply irrelevant, not to mention in the second case that the claim is false.

A circumstantial ad hominem fallacy is the claim that what a person says is false because of his circumstances, usually because he has something to gain from saying it. Suppose that I argue that all college professors deserve to be paid more money, and someone says, "Well, obviously what Delattre says is

false, because Delattre's a college teacher and stands to profit." Well, it may be true that I stand to gain from it. It also may be true that that's my motive for saying it. But the question of whether it's true is another question. My motives are irrelevant here to the truth of the claim.

We see this kind of fallacy very often in political discourse, where it's very hazardous because it always diverts us from the issues at stake, very dangerous, and students need to be brought to awareness of it. Z, for example, will say something like "A given agency in the government is abusing its funds. It's not doing the job it's supposed to do. It's a waste of the taxpayers' money. The bureaucracy is inefficient." Then some official in this agency will be asked explicitly by reporters, "There have been criticisms of your agency, are they true? Is it true that the money is being ill spent? Is it true that the services that you're supposed to provide are not in fact being provided? Z alleges this." Frequently what we hear is: "Well, you know Z is running for office" or "Z is obviously doing this because he needs publicity politically." Now that's the answer to *a* question, but that question is "What are Z's motives for saying this?" That's a very different question from the question that was asked: "Is this true?" So this circumstantial ad hominem fallacy manages to divert us from concern for the issue that's at stake – how the money of the taxpayers is being used.

Another form of the fallacy of irrelevance that's especially important is the fallacy of appeal to ignorance. This occurs when somebody says, "What I say is true because you can't or haven't proved that it's false." Claims are not true just because they haven't been proved to be false. Frequently claims are indeterminate for us; that is, they are no doubt true or false independent of us, but we don't know which. And to know that something hasn't been proved false is not to know that it has been proved true. The way one can explain this to students most effectively is to make clear that if you reason in this way, you can be led to inconsistencies, and that's of course crucial. Suppose, for instance, that I say that I think there was some hidden figure who really manipulated Napoleon Bonaparte. You say, "Well, how do you know that?" And I say, "Well, you haven't proved it's false, have you? So it must be true." Well, you can turn right around and say, "My thesis is that there was nobody behind Napoleon Bonaparte, that he determined his own behavior, charted his own course." And I say, "But how can you possibly know that?" And you reply, "Well, you haven't proved it's false, have you?

So it must be true." And by the same principle of reasoning we are led to inconsistent conclusions. We can't both be right in this case. Now any principle of reasoning that can serve us that way ill serves us and is a form of reasoning we can't rely on.

The appeal to consensus is another fallacy students should be able to spot: "Such and such is true." "Why?" "Because a great many people believe it, or because it is the consensus of the public." But we don't find out what things are true by appealing to the majority. We insist in this country that the majority has a right to its will, but not therefore that its will is right, or that what it wills is the truth.

The appeal to force is self-explanatory: "What I say is true because if you don't assent to it, I will hurt you or make you suffer some consequence at my hand" – obviously not a case of reliable reasoning.

As its name suggests, the fallacy of insufficient options offers fewer alternatives than can legitimately be thought of. I remember when, after the students had been killed at Kent State, I was on a radio program to say some things about my views and take telephone calls from people who asked questions or sometimes harangued me and so on. One woman called and said that it was clear from my remarks that I didn't love the University and that I had no real regard for it; and then she said, "But I want to see whether you have any character at all. Do you have a family?" When I said, "Yes," she said, "Well, let's see if you even love your family. Let's see whether there's any merit to you at all. Suppose you went home from this radio broadcast and found your wife and children had been murdered in your living room. Now, would you just sit down and do nothing? Or would you go find the person who did this and kill him?" I said that I'd rather do neither of those things, that I thought those options were insufficient, that I hoped I'd be able to bear my grief on the one hand and also call the authorities and hope that the agencies of the law took their course and apprehended the person who had done this and brought him to the sanctions of the law in an appropriate way. I confess she was largely unsatisfied by that answer. But we see this situation so often: too few options and the attempt to make one believe that one of those options has indeed to be chosen. Many times, when problems arise for people, it's because they start with insufficient options and are led to conclude for the rightness of one when in fact some option that hasn't been thought of or made explicit would be the best.

For the last of our examples of non sequitur fallacies let's look at the fallacy of special pleading. It's especially important to work with students on this fallacy because it highlights once again the fact that inquiry is not competitive, that the purposes of inquiry are the achievement of knowledge or the approximation thereof and not beating somebody, not winning over someone else. Special pleading is the fallacy of offering only the evidence that supports one's own position and explicitly ignoring the evidence that weighs against it.

This special pleading also has a behavioral element when a person pleads specially for himself by applying principles to others which he does not apply to himself or allowing himself treatment which he denies to others. I'm reminded of a man who was responsible for large amounts of money to be used for the care and education of retarded children in Texas. He was a man who contributed great sums of money to political candidates always candidates who had a great deal to say about the merits of law and order. He himself gave extensive speeches on the need for law and order. Then it was discovered, almost by accident, that he was guilty of very great crimes: using the money earmarked for the care of retarded children for his own purposes – cars and vacations and palatial houses and what not. Now, this was a man who was applying to other people the principle of the obligation to respect the law and yet insisting in his own behavior that the principle didn't apply to him. That's a case of special pleading.

And special pleading is one of the areas where logic and morality overlap. In this particular case, the principle of justice is very closely connected to the principle of consistency: when one recognizes the right of everyone to just treatment, to fair treatment, to equitable treatment, he recognizes it because they are all persons; and, because he himself is a person, on grounds of consistency he deserves, initially at least, the same treatment as others. There are, I think, a great many connections between logic and morality, and the fallacy of special pleading presents occasions, when we're working with students, to highlight that particular point.

DONOVAN Suppose one of our students is guilty of special pleading – that's not too hard to imagine. How, specifically, would you set about helping him and at the same time using his fallacious reasoning in your ex tempore lesson plan?

DELATTRE It's tremendously helpful in working with a student not flatly

to disagree with him when he says something that you know to be wrong, but rather to be able to explain explicitly what it is about his reasoning that you distrust or, if you will, what it is about his reasoning that makes you view it as an unreliable way to think. In my experience, it's most important not to be reduced to "There's something wrong with your view" or "I don't believe you." It's pedagogically pointless. It gives the student nothing to think about. There's no substitute for being able to say, "It's this that I am critical of in the way that you are reasoning."

Then of course we can work with analogies, offer examples by analogy. I talked earlier in my remarks about the unreliability of the form of inference that said, "All presidents are rich men and Gerald Ford is a rich man, therefore Gerald Ford is a president." Well, if one were going to reason by analogy, to show by analogy, what's wrong with this, one could use an example like "All dogs are animals and my cat is an animal." Notice that the arguments are precisely parallel at this point. All the terms are similarly related, they're in the same places at least. And the conclusion – if that form of inference were reliable – the conclusion would be "Therefore my cat is a dog." Of course any student can see that he has started with true information here, and he has reached a conclusion that is so palpably false that there can be no doubt of it. He can see that, if he reasons in this way, he can start with true information and end up with things that are utterly ridiculous.

So if he is, as in your example, pleading specially, offer analogous cases of special pleading which he will recognize as such. Or ask questions which will enable the student to discover counter-examples to his own thesis. In terms of distinguishing good reasoning from bad, reliable reasoning from unreliable, and the identification of fallacies, it's this sort of thing that you can call to the attention of students. We need to use particulars and specifics. Students need to work on how to identify errors in reasoning, how to learn to notice their own errors, not just to be critical of others, but to test their own thinking and their own work. It's in working with them in this way, it seems to me, that this whole problem of the tyranny of reason or of reason as something "outside me" or disembodied can be overcome – reasoning, the activity of reasoning well, comes to be part and parcel of the student's powers for addressing questions of significance to him, whether he imagined or thought of those questions himself, or whether they were brought to him by the enlightenment of a teacher.

DONOVAN Your cats and dogs example suggests that you can start this with fairly young children. Our other examples have been more appropriate to the high school.

DELATTRE Yes, I think that you can begin fairly early. The principles apply in youth, and the kind of reasoning that we've been talking about not only cuts across the curriculum; it has its application in very realistic and ordinary circumstances that students find themselves in.

DONOVAN The analogical reasoning you've dealt with has always seemed to be very fruitful in the classroom.

DELATTRE Yes, you have to make clear and explicit what you look for in examining an argument. What are the characteristics by which you identify something as a case of this fallacy or some other fallacy? And many times when you explain in the way that I have, to a student, that we're confronted with a fallacious way to reason, it takes rich and illustrative examples to bring the point home. It's not enough to say, "Well, don't you see that this kind of ad hominem reasoning is unreliable?"

DONOVAN Do you dare make an exemplum of your student in that case, and tell him that what he himself is saying must be false because he has red hair?

DELATTRE Nothing is false just *because* some individual says it. I try to use examples that are jokes – gentle jokes. This is one I used in a class once, when a student said, "Well I don't care what you say; if somebody's crazy, I'm not going to believe what he says." And I said, "Well, my point was not an exhortation to believe what he says. It's a plea not to reject it just because he said it. It's an exhortation to understand that the claim he makes has to be assessed on its own merits irrespective of the person who asserts it." And I went on to tell the story about the fellow who has a flat tire outside a mental institution. He takes off the tire and, in getting the spare, he inadvertently kicks the hub cap into the bushes. He's put all the nuts into the hub cap, and now he doesn't know what to do. He's got the wheel on, but he's got no nuts to fasten it with. One of the people in the institution is watching him and says, "What'd you do there? Lose the nuts to put that wheel back on?" The tire-changer admits it, and the fellow in the institution says, "Why don't you take one of the nuts off each of the other wheels and put it on that one? That'll be enough to get you to a gas station, and you can get it fixed." And the driver says, "Gee, that's a marvelous idea." Before he drives

away he hollers, "You know that's really brilliant. I'd never have thought of that. What are you doing in that institution?" The fellow smiles and says, "Look, Mac, I'm crazy, not stupid." Just because he's insane doesn't mean he can't speak the truth. And the same would be true if he *were* stupid! Or evil or vile or unattractive, and so on.

The feature that any example has to have is this: here we'll take some information that we know to be the truth, and we'll reach this conclusion that we know to be false. Then all you have to do is show the similarities with the other piece of reasoning being examined. Students can see them pretty clearly. As I've said, they really do get that feeling of "Yeah, I know something's wrong here, but I don't know what it is." It's up to us to help make explicit for them the kinds of mistakes that they and we have to beware of.

Remember, though, that one of the hardest things to make clear to students is that you're not providing them with an arsenal simply to destroy the positions of others. You're not giving them a weapon here. You're discussing a tool with which to assess their own thinking most of all. That directing of the power of reasoning to their own views is what you hope most of all to communicate. Too much work in logic is geared to learning how to criticize the arguments of others.

DONOVAN Well, that, of course, is why you've made a point of emphasizing logic as inquiry – mutual but also personal. This kind of learning helps the student when he, for example, sits down to write a composition. It helps him order his thinking, without which there's not much point in his trying to write. It seems to me that a great part of the difficulty that young people have in learning to write brief compositions – even paragraphs – a great part of the difficulty is innocence about inference and simple relations of ideas. It's not a problem in literacy. It's some other kind of problem – an innocence or an ignorance of the way things go together – and it seems to go back to some basic incoherence in the child's early experience as a speaking being, even before he comes to school to write something down on paper. Perhaps, Ed, we're back to your mistrust of the utter differentiation, these days, between reason and emotion. The child is asked to express his emotions, in this culture at least, but not expected to think – to reason – very much when he's young. The emphasis, for a number of years now, has been on children's feeling free to express their emotions.

DELATTRE And that's fine, just so it's made clear to the children what it

is they're doing, and not substituted for something else. And then, there's the other critical point we mentioned earlier: if adults teach a child to believe – or let him believe – that an argument is a quarrel, and that's all he knows about argument, we're not going to be able to teach him very well what inquiry is, what the pursuit of the truth is. Our failure to communicate a sense of the nature and possibilities of inquiry leaves students either all too dependent on "dispensed truth," truth given by someone else, irrespective of competence, or else firm in the belief that there is no truth, no knowledge to be sought. We must avoid these insufficient options and remain faithful to the fact that often the student has the wherewithal to discover the truth for himself if he but knew how to look, knew how to think, knew how to reason about it. One sentence I use is, "Part of what I'm going to try to teach you in this logic course is what you know, whether you know it or not." They already do know a great deal. But it's not at their fingertips, it's not explicit for them. And so, in teaching them about reasoning, and talking about reasoning, we are, in large measure, rendering explicit what they already in some implicit ways understand. And the teacher reading the elementary logic book is going to find that that's true too. This is not a textbook in a strange new world. Basically he's been dealing with this sort of idea for many, many years. Here it's simply codified and enclosed and made explicit in this particular set of covers. Logic is not something with which people are utterly unfamiliar. It's accessible to us all.

DONOVAN It's like the rhetorical tropes, which can be displayed formally in a textbook, but are encountered everywhere, even if you don't know all their names – oxymoron and synecdoche and all the others.

DELATTRE Right. And keep in mind I'm not just talking about knowing names. Certainly I think knowing the names is important. I think the ability to classify is vital in assessing argumentation. Lots of times students ask me, "Do we have to learn the names?" For a long time I talked about the powers of language and about the importance of being able to classify things, and then I realized that that was the wrong tactic. So I began to respond to that inquiry with a question of my own: "Are you asking me whether I think it's in your interest to increase your vocabulary? And if that's your question, the answer is yes."

DONOVAN That's what I'm asked. And somebody always wants to know: "Are we going to be tested on all these names?"

DELATTRE I talk with students a good bit about the pointlessness of learning things because one will be tested. If grades become the motive for work, the whole purpose of the educational project has been undermined. They become an external motive, and they have nothing to do with the interest or long-range understanding of students. It is tremendously exciting instead of hearing students asking one another, "What'd you get?" to hear students turn to one another and ask, "What'd you learn?" It seems to me that the way to make clear the purposes of learning is to try to show in practice the kind of power learning gives one in thinking about questions of significance to himself. Any attempt to dissociate the techniques of thinking well, of reasoning well, of being genuinely critical, from questions of real impact is bound to serve the student ill and to serve the subject matter ill. I think it's thoroughly possible, in courses of all kinds, to bring into play the kinds of considerations we've talked about. And not only is it possible, it's necessary. Further, it's easy enough to explain to students that you don't have to seek good grades to get them. If you seek mastery of the material, the grades follow.

DONOVAN This is an ongoing process for both teacher and student. It's not a time when the teacher is making a liturgical proclamation. The teacher is examining and studying and learning along with his students every time the subject of critical thinking comes up. While I've spoken of the opposition that comes from students in some situations, I find that here the students are joining me or I am joining them. It's quite grand, really, to have this experience of working together in a completely human and ageless kind of project. Ageless in the sense of one's personal age making no difference.

Ageless in another sense, too, because mankind's history of looking for this kind of thing and sorting it out goes way back. How far, Ed? What's the earliest time for which we have records? It's easy enough to talk about Plato and Socrates, but is there anything earlier than that?

DELATTRE Certainly in the Greek tradition, the pre-Socratics are rich in logic, especially in relation to geometrical proof. When Socrates began to reason, the Pythagorean traditions were well established, and the Egyptian tradition is older still.

DONOVAN It's nice to point this out, though, so that the students don't think it's something that somebody just dreamed up recently to bedevil them with. It's something that mankind has been genuinely curious about.

DELATTRE Think about the associations of ideas that went into the most elemental discoveries—the discovery of fire, the cooking of food, the warming of one's body, experimentations with colors in drawings in cave walls, and so on. All those involved the process of reasoning, so I presume it's as old as man.

DONOVAN Well, it's definitive of man, isn't it?

DELATTRE Well, I want to avoid that. I want to avoid that because if you get somebody who reasons badly, you run the risk that he'll be ruled out as a man, or as a person, and I don't think that's a warranted conclusion.

DONOVAN Now we're getting into values, aren't we? So can I ask whether or not you have to have a special sort of value system in order to think logically?

DELATTRE I'm not sure what a value system is. Do you have to have values? Do you have to value certain things in order to care about reasoning? Certainly.

DONOVAN Yes. What things do you have to value?

DELATTRE Well, you have to value the truth. You have to value the reasonable. It is, after all, an imperative of sorts when one says in the principle of rationality, "We ought always to subject our beliefs to the test of evidence." Or "We ought always to seek to discover the evidence relevant to what we think or what we suspect or what we are prepared to believe." When we talk – notice, when we talk – about responsible people, we don't talk about responsible people as people who are always right, or people who always agree with us. We talk about people as responsible who approach questions of human importance in particular kinds of ways. We distinguish responsible people from people who are prejudiced about any sort of thing. Prejudice means, literally, prejudging; and prejudging means judging in the absence of evidence. It means judging in independence of the relevant considerations, of the information that could be gained. What does one find? In the case of a prejudiced person, it's as though all considerations in the world external to him were irrelevant. He's going to decide just on the basis of what's in him. That's part of what we mean by being irresponsible – that one has been insensitive to the considerations that ought to have gone into any decision about the issue in question. So, when one talks about reasoning in the ways that we have, one is really declaring oneself for the rightness of a certain kind of responsible human existence – existence in which one bases his decisions on the evidence that time and ability allow him.

DONOVAN So that logic in this sense, or reasoning as logic, is really part of a moral posture. Is that the case?

DELATTRE I think so. I think that the concern to understand and to base one's actions and his decisions on understanding, and hence on evidence, on reliable forms of inference – I think that this is one element, one part, of excellence of character.

Bibliographical Note

In addition to a wide selection of logic texts, there are also numerous books and articles about logic and its history and development. The textbooks are primarily instruction manuals which explain how to reason correctly and identify and classify the varieties of errors in reasoning.

Command of the material available in any decent textbook will enable the teacher to convey the nature of inquiry and argument to students and to assess arguments in discourse. The areas of strength in textbooks vary, of course. Textbooks of general good quality and reliability include *The Elements of Logic* by Stephen F. Barker (New York: McGraw-Hill, second edition, 1974; hardback), *Introduction to Logic* by Irving M. Copi (New York: Macmillan, fourth edition, 1972; hardback), and *An Introductory Logic* by William J. Kilgore (New York: Holt, Rinehart and Winston, 1968; hardback). All three use conventional approaches treating language and language usage, principles and types of definition, formal and informal errors, and deductive and inductive argumentation. All provide numerous exercises to check mastery of the material.

In a slightly different style, geared specifically to improve reading and writing, is *Thinking Straight* by Monroe C. Beardsley (Englewood Cliffs, N.J.: Prentice-Hall, 1966; paperback). *Logic* by Wesley C. Salmon (Englewood Cliffs, N.J.: Prentice-Hall, 1963; paperback) is part of the Foundations of Philosophy Series. It is a tight little introduction, particularly good on the scope of logic (Chapter 1), but lacks exercises. *Improving Your Reasoning* by Alex C. Michalos (Englewood Cliffs, N.J.: Prentice-Hall, 1970; paperback) is especially useful as a survey of types of fallacies, and includes exercises and an answer list. Teachers may find its orientation to fallacies helpful. The same general orientation, with emphasis on advertising and politics, and including a section on fallacies in school textbooks, e.g., history books, is offered in *Logic and Contemporary Rhetoric* by Howard Kahane (Belmont, Calif.: Wadsworth, 1971; paperback). Teachers interested in a more philosophical base for the study and practice of argumentation will be interested in *The Web of Belief* by W. V. Quine and J. S. Ullian (New York: Random House, 1970; paperback).

Some texts are excellent in specific areas. *Fundamentals of Logic* by James D. Carney and Richard K. Scheer (New York: Macmillan, second edition, 1974; hardback) has a very nice individual chapter on language usage, types of nonsense, and category mistakes. *An Introduction to Logic* by Morris R. Cohen and Ernest Nagel (New York: Harcourt, Brace and World, 1962; paperback) has a pointed chapter on the laws of thought in logic and the relation of logical principles to the nature of reality. The chapter is called "Problems in Logic."

For readers whose interest run beyond the mastery of logical skills to the history of logic or logical theory or philosophical essays about logic, readings are available too. Good essays on the history of logic are available in both *Encyclopedia Britannica* and the *Encyclopedia of Philosophy*. A standard scholarly history is *The Development of Logic* by William and Mary Kneale (London: Oxford University Press, 1962; hardback).

Among the most readable pieces in, rather than about, the history of logic and inquiry are Book VII of Plato's *Republic*, the section "Idols Which Beset Men's Minds" in Francis Bacon's *Novum Organum*, "The Science of Evidence" in John Stuart Mill's *A System of Logic* (New York: Harper and Bros., 1874; hardback, pp. 17-24), and Charles Sanders Peirce's famous paper "The Fixation of Belief" in the *Collected Papers of Charles Sanders Peirce*, vol. V (Cambridge, Mass: Harvard University Press, 1960; hardback). All these selections are available, along with numerous others, in *Readings on Logic*, edited by Irving M. Copi and James A. Gould (New York: Macmillan, 1964; paperback).

All or nearly all the books I have mentioned are available in any university library and many will be among the holdings of public libraries. The paperbacks mentioned are relatively inexpensive.

Finally, it is important to remember that in working with students about reasoning it is vital to conjoin explanation of the features of good and bad reasoning with rich and illustrative examples of both. It must be stressed in class that being persuasive is not always the same as being reasonable, and that in being reasonable, one learns about the kinds of arguments which ought to be accepted as persuasive and the kind which ought not. In stressing this point, we are able to capture most vividly the purposes and the spirit of genuine inquiry.

E.J.D.

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